Machine-Produced Incidents X-ray and Accelerator

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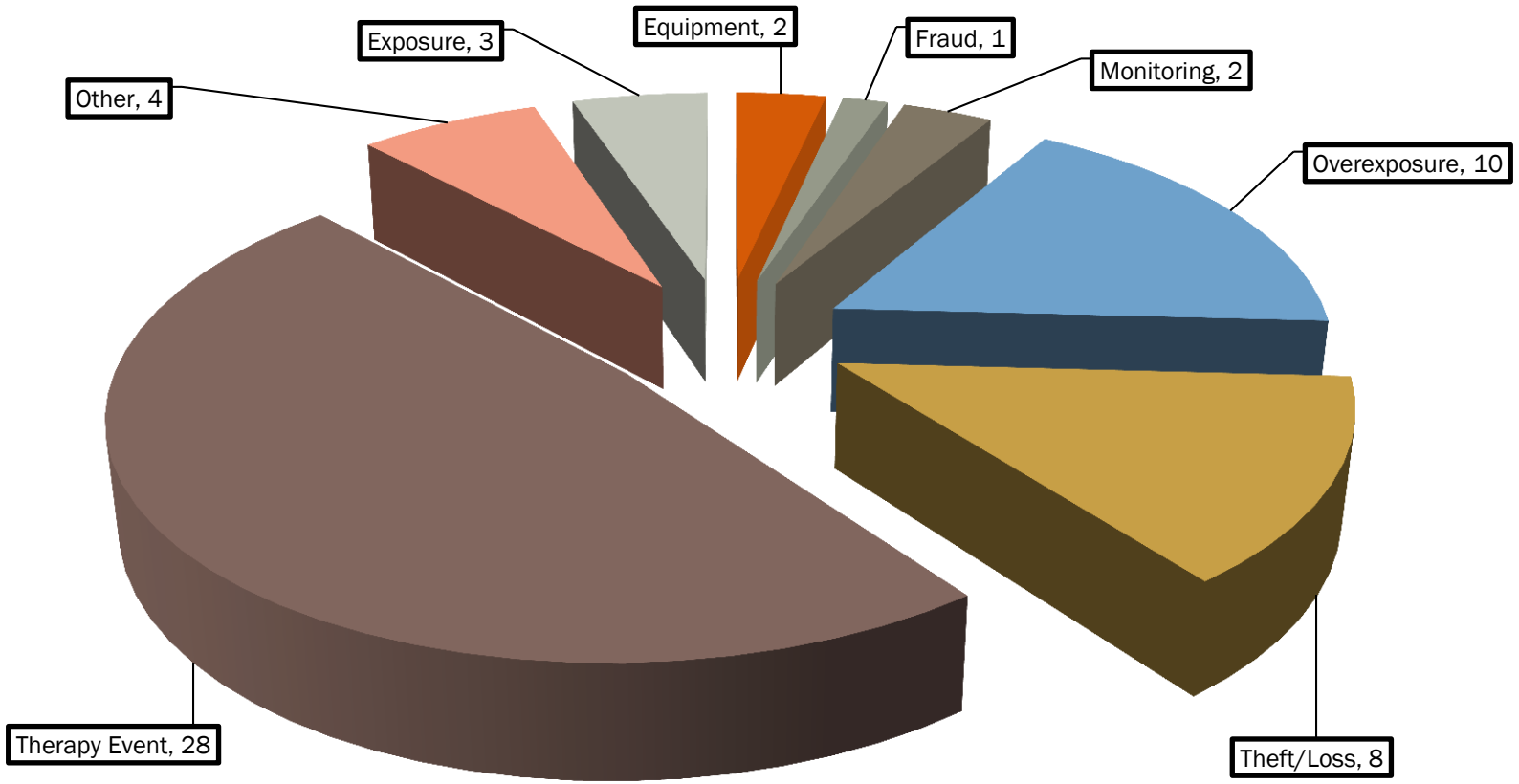
Introduction

- Incident Investigation
  - Complaints
  - Incidents
  - Technical Assistance
- Hotline number - 512-458-7460
  - Immediate reportable events must be reported to an actual live human in the Incident Investigation group

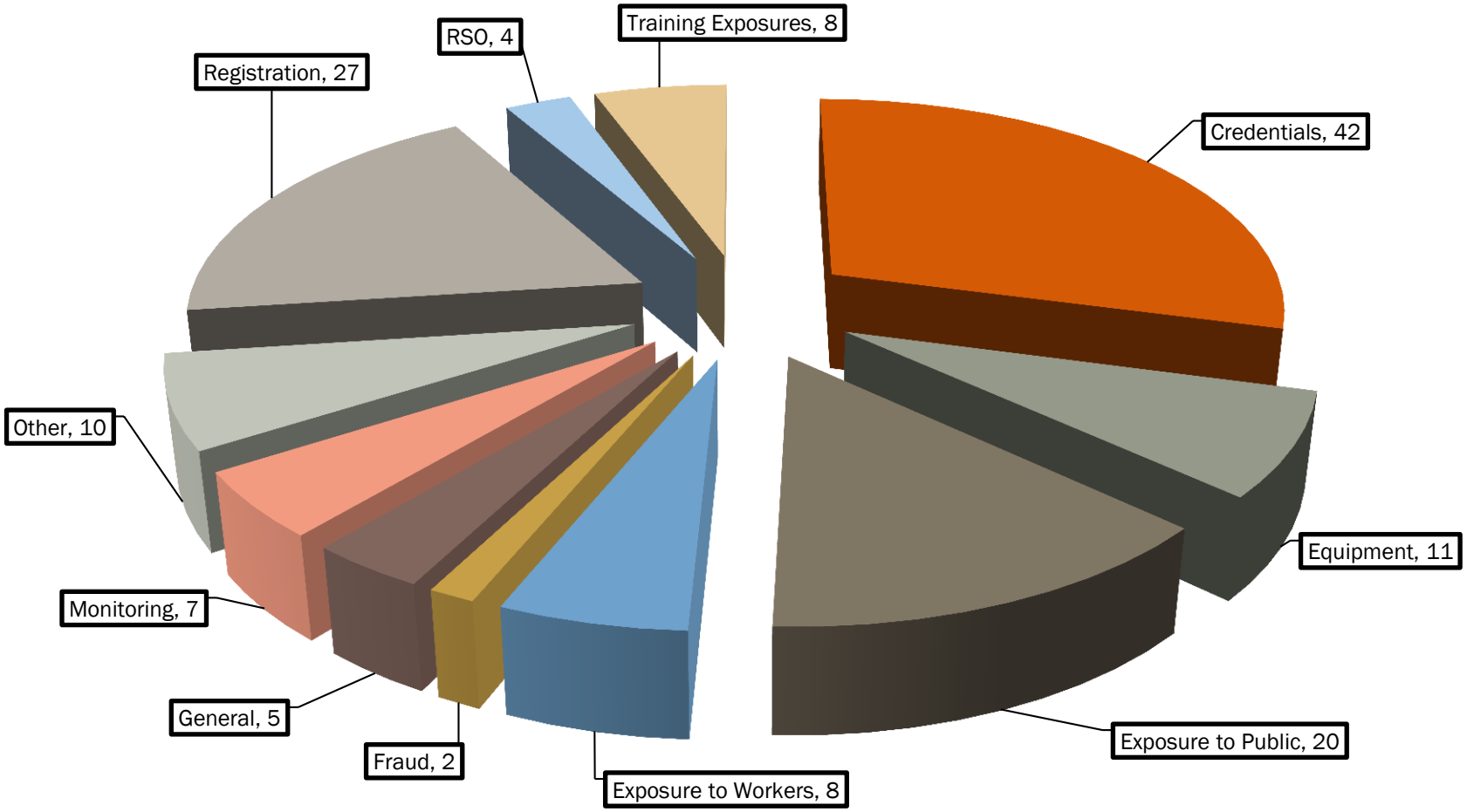
Statistics 2010 – Present

59 Incidents



Statistics 2010 – Present

140 Complaints



Wrong Patient

- Name called to waiting room
- Wrong patient responded to called name
- 250 cGy (250 rad) to lumbar spine instead of prostate
- One of 43 fractions
- Due to overlap in the treatment area and actual dose received (50%), it was determined that the fraction did not need to be repeated

Wrong Patient

- Corrective Action: Two forms of ID required before treatment begins
- This event was reported to us by the registrant the next day
- No violations were cited

Hole in the Wall

- Generic letter claiming exposure to patients and employees
- Letter mentioned previous address of imaging facility
- Inspector conducted unannounced onsite investigation along with new site inspection

Hole in the Wall

- CT technologist had noticed a hole underneath control desk
- Metal filing cabinet had recently been moved away
- The technologist borrowed a survey meter from the nearby nuclear medicine group
- 0.5 to 1.0 mR/hr at the hole with the CT on

Hole in the Wall

- CT technologist was upset enough that they quit immediately
- The hole was temporarily covered with a lead apron and mobile lead shield
- Medical physicist was called in to evaluate
- It was determined that the exposure received by the lower extremities due to the hole was 6.12 mR over the course of the technologist's employment (3 months)
- From the physicist's report: "I consider this dose to be negligible even if it were 10 times higher."

Hole in the Wall

- The technologist was contacted by the medical physicist
- The rest of the routine inspection did not uncover any other abnormalities
- No violations were cited

Fluoroscopy Badges

- Received phone call from registrant stating one badge had gone over (5,368 mrem DDE)
- This was the third quarter report, with that badge by itself reading 1,657 mrem DDE
- No significant recent change in workload
- Same registrant had had 2 previous overexposures, one self-reported and one found during routine inspection.
- The badge reading for the incident found during the routine inspection was 19,186 mrem

Fluoroscopy Badges

- Fluoroscopy is one modality for which workers themselves receive a lot of exposure
- Lateral view during close needle readjustment likely a major contributor
- Physician wore badge on pocket outside of apron rather than on collar
- Rule 289.231(m)(3)(B) did not apply

Fluoroscopy Badges

- Third quarter badge reported in late November
- Final year dose not known
- Some discussion about switching physicians to monthly badging
- The physician had to stop working for the year
- One violation was cited

Practice Makes Perfect

- Received a complaint with a list of dental schools allowing students to x-ray each other for training purposes
- Training exposures not a medically-necessary type of exposure
- 96 dental schools were implicated in the complaint

Practice Makes Perfect

- Ultimately, 2 of the schools had substantiatable violations
- This is a practice we hear of from time to time in dentist's offices as well, to train up new staff on the office's particular equipment
- Using a medically necessary set of x-rays as a teachable moment is fine

RSO MIA

- Anonymous phone call that a facility was operating without an RSO and without monitoring or protective shielding
- This facility had eight physicians using fluoroscopy

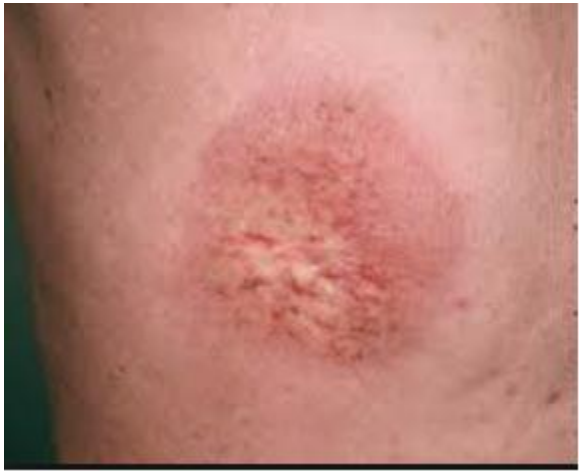
RSO MIA

- Onsite investigation with inspector revealed that the RSO had been let go over 30 days before
- New RSO candidate was leaving as well
- New new RSO candidate was beginning training and would be added to registration soon
- No evidence of monitoring for physicians was found
- Other staff were badged

RSO MIA

- Highest severity violation due to not following the technique charts
- Seven violations were cited
- Even if you have badges, you must have records
  - “If it isn’t written down, it didn’t happen”
- Changes in RSO, sites, or any other portion of the registration must be sent to licensing

Be Careful



Be Careful

- This did not happen in Texas
- We have been very fortunate
- Be diligent and attentive
- Check, check, check, identity and treatment plan
- Be careful of your own safety and your patients'

24-Hour Hotline Number

512-458-7460

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And Now a Word from Our X-ray Inspection Group

Personnel Monitoring & EDE Calculations

- Department discovered personnel monitoring company has been **adjusting personnel monitoring exposures,** even for facilities that don't use fluoro.

Personnel Monitoring & EDE Calculations

- Why is that a problem?
- §289.231(m)(3)(B) - dose reductions using the **effective dose equivalent (EDE) calculation** is **only** for **fluoro procedures**
- What should you do?
- **Check your reports** against who does fluoro at your facility.

Personnel Monitoring & EDE Calculations

- If the EDE calculation has been used incorrectly, **contact the badge processor** for a revised and accurate exposure report
- **Ask them to stop** doing this unless you make the request

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